FACTSHEET

AGRICULTURAL ENGINEERING | ANIMAL SCIENCE

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Ontario Ministry of Agriculture, Food and Rural Affairs

Nutrient Management Act, 2002

PREPARING FOR NMA LEGISLATION

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INTRODUCTION

The Nutrient Management Act, 2002 (NMA) was passed June 27, 2002. The legislation creates a scheme for a comprehensive, province-wide approach to nutrient management. Proper nutrient management is designed to protect soil and water quality in Ontario's rural communities, while ensuring that farmers can invest in and operate their farms with confidence. The Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) and the Ministry of the Environment (MOE) are responsible for governing the act.

Along with the act itself, there is a 12-part Regulation [O. Reg. 267/03], which outlines standards, as well as 2 protocols. The Regulation was enacted on Sept. 30, 2003.

The purpose of this Factsheet is to provide information on what you must do and when, to prepare a Nutrient Management Plan (NMP) and Nutrient Management Strategy (NMS) to comply with the Nutrient Management Act Regulation.

Before signing any contracts or beginning major construction be sure your NM strategy has been approved by OMAFRA.

NUTRIENT UNITS (NU)

Farm size is a main criteria determining when farm units that generate more than 5 nutrient units (NU) must comply with most of the provisions of the Regulation. The number of NU generated determines the size of farm unit. In the Regulation, a nutrient unit is defined as *"the amount of nutrients that give the fertilizer replacement value of the lower of 43 kilograms of nitrogen or 55 kilograms of phosphate as nutrient as established by reference to the Nutrient Management Protocol"*. Part 3 of the Nutrient Management Protocol contains a table listing various species and sizes of animals and the number of each it takes to generate one NU. A Nutrient Unit Calculator can be downloaded from the OMAFRA website and is a quick and accurate way to find the number of nutrient units generated on your farm unit.

OPERATIONS SUBJECT TO THE REGULATION

All Farms

The Regulation does not apply to farm units that generate 5 or fewer nutrient units of manure annually. The exception is that all farm units, regardless of size, are currently subject to the following 3 provisions of the Regulation:

- No application of non-agricultural source materials within 20 m (65 ft.) of surface water. [O. Reg. 267/03 s.45]
- Prohibitions on application of sewage biosolids from Dec. 1 to Mar. 31, or on snow covered or frozen ground [O. Reg. 267/03 s.47(3)]
- High trajectory guns are banned [O. Reg. 267/03 *s.49*] for the land application of:
  - non-agricultural source materials with less than 99% moisture content and
  - manure with less than 99% moisture content.

Farms Required to Prepare a NMS/P (Nutrient Management Strategy/Plan)

The following section deals with the phase-in of new, expanding or large farms.

Subsection 11(1) of O. Reg. 267/03:

Subsection 11 of the Regulation determines when s. 10 of the Regulation applies. The application of s. 10 to an operation in effect phases that operation in and requires the preparation and approval of a NMS. The section says:

"(1) Section 10 applies to an agricultural operation that generates agricultural source materials if the person who owns or controls the land, on which the operation is carried out and that the current owner acquired under a single transfer as defined in the Land Registration Reform Act, has not carried out the operation on the land at any time before September 30, 2003 and submits an application, on or after that date, and before December 31, 2005 for a building permit under the Building Code Act, 1992 with respect to any building or structure that is used to house farm animals and that is located or to be located on the land."

However, this section has now been further affected by a new section 11(4).

Subsection 11(4) of O. Reg. 267/03:

"(4) Section 10 applies to an agricultural operation that generates agricultural source materials if, at any time on or after December 31, 2005, a person who owns or controls the land on which the operation is carried out,

(a) submits an application for a building permit under the Building Code Act, 1992 in respect of any building or structure that is used to house farm animals or to store manure and that is located or to be located on the land;

(b) constructs or causes to be constructed any building or structure that is used to house farm animals or to store manure and that is located or to be located on the land, if a building permit in respect of the building or structure would be required under the Building Code Act, 1992, but for the application of clause 2.4.1.1.(1) (b) of Ontario Regulation 403/97 (Building Code) made under that Act; or

(c) constructs or causes to be constructed a permanent nutrient storage facility made of earth on the land."

This amendment changes the definition of "new and expanding" to now include any farm that applies for a building permit for a structure to house animals or store manure. This also includes earthen lagoons that do not need a building permit. Now any farm that expands and needs a building permit is subject to the Regulation even if they generate less than 300 NU.

Note that the Regulation generally does not apply to operations that generate 5 or fewer nutrient units of manure annually.

New operations generating more than 5 NU will require a NMS and possibly a NMP (if greater than 300 NU or near a municipal well) depending on the destination of these materials.

Subsection 11(3) of O. Reg. 267/03:

"(3) Section 10 applies to an agricultural operation that generates agricultural source materials if the number of farm animals on a farm unit on which the operation is carried out is sufficient, at any time on or after July 1, 2005, to generate 300 or more nutrient units annually."

Existing operations of 300 NU or more were phased in July 1, 2005 and now must:

- register your farm operation with OMAFRA and have a NMS and NMP on file
- comply with all well and surface water setbacks for land application of nutrients and
- comply with winter spreading restrictions and any other requirements of your NMP/S.

Your NMP must be prepared and kept on the farm by Dec. 31, 2005. If you do not have an NMS/P as of this date, you still must comply with the 3 land application provisions of the Regulation.

The farm is phased-in as soon as any of the 3 conditions listed above in Subsection 11(4) of O. Reg. 267/03 apply.

OTHER FARMS

The provincial Nutrient Management Advisory Committee will make recommendations to the government regarding the phase-in of other farms. Indications are this phase-in of other farms will not occur earlier than 2008. There may be funding available prior to the other farms being phased-in. Farmers should consider these statements carefully if they are not phased-in before 2008 and if they are not in contravention of the Environmental Protection Act, the Water Resources Act, a municipal bylaw or any other legislation and do not have an environmental problem on their farm.

The Regulation supersedes municipal bylaws that deal with the same subject matter. Therefore, farms listed above are more likely to be governed primarily by the

Regulation, while other farms will be more likely to have requirements under municipal by-laws.

DECLARING A FARM UNIT

The first step in determining your requirements under the Regulation is to decide what category you fit into. It is your responsibility to consider the size of your farm unit and therefore define how the Regulation applies to you and when.

It may be advantageous to have more than one farm unit but there are rules that apply to how you determine a farm unit.

- A farm unit consists of farm structures and land necessary to manage an operation and typically includes barns and associated storage facilities, outdoor confinement areas (OCA) and all lands where prescribed material (an agricultural source material or a non-agricultural source material) is applied, including land that is owned, leased or subject to nutrient application agreements.
- A single farm unit may be as simple as a single livestock operation or consist of one or more livestock operations. Distance is not a factor when determining the farm unit. As well, there is no limit to the potential size of the farm unit.
- If prescribed materials are generated during an agricultural operation carried out on the land, the land of the farm unit must include all land that the current land owner on which the materials are generated acquired under a single transfer as defined in the Land Registration Reform Act and on which the materials are managed (this is commonly thought of as the single deed concept).
- Separately deeded properties with different livestock facilities may be combined to form a single farm unit or defined as separate farm units, depending on the owner's needs and preferences.
- The farm unit is defined using the farm unit declaration forms supplied in *www.forms.ssb.gov.on.ca /mbs/ssb/forms/ssbforms.nsf/AttachDocsPublish/003-NM-001-1/$File/FarmUnitDeclaration.doc.*

Before defining the farm unit, an operator must consider the following points:

- it can be no smaller than a single deeded property where the nutrient is generated
- the farm unit must comply with s. 5 of the Regulation
- time and effort required to manage single or multiple farm units
- each declared farm unit may require a separate NMS and possibly a NMP
- the NMAN (nutrient management) and MSTOR (manure storage) software used to prepare plans and strategies can handle several livestock operations including multiple livestock types and management scenarios
- there is no limit to the number of animals declared in a farm unit
- the farm unit may include all lands where prescribed materials are being applied to the land or provide for their transfer elsewhere.

It is a good practice to take time to determine your farm unit(s), and the amount of nutrient units generated on the farm unit(s). Determining the number of farm units and their size will allow you to have your NMS/P prepared and approved or registered in advance of the Regulation's requirements and to ensure you are not in violation of the Regulation. This determination could be helpful if you have multiple properties that generate a combined total of more than 300 nutrient units.

If the individual properties generate less than 300 NU you might want to declare 2 separate farm units. Having a copy of a completed farm unit declaration form on file could save time and effort. Do not wait until the last moment.

FACTORS TO CONSIDER WHEN DETERMINING A FARM UNIT

How to treat multiple properties?

If you have multiple properties, do you want to treat them as one unit, or two or more units?

There are many reasons for subdividing a farming operation. Perhaps by doing so, the farm units will fall under a different regulatory agency (either subject to the provincial Regulation or municipal by-law) than they would have been as a whole and you might find that advantageous. However, note that each farm unit would likely require a separate NMS/P. Or, due to location it might make sense to treat two separate properties as different farm units.

In any event, the decision is yours, subject to the farm units meeting the minimum criteria described in the Regulation.

You may have more barn capacity on your farm than you are currently using. Existing operations can calculate their NU based on current utilization rather than capacity of the facility. NU for new or expanding operations are also based on utilization. However, manure storages must be sized using barn capacity. If you are declaring size based on current use, it must be documented and records kept on an ongoing basis.

FARM SKETCHES

Three sketches are used to convey information related to the farm unit(s). They are the Farm Unit Sketch(es), the Farmstead Unit Sketch(es) (part of the farm unit sketch in the Regulation and Protocol) and the Field Sketches. Include as much information as possible that pertains to the NMS/P for the operation on the sketches. For farm units that are in multiple locations, more than one sketch may be necessary as is the case for Field Sketches.

Farm Unit Sketch(es) (Figure 1)

It is important to properly identify the farm locations on a map. Include a north arrow to orient the properties. Show the names of roads, lot, concession and township, as well as distance and direction to nearest landmark (town or village) so that someone could find the location. If there are multiple sites, show the relation of one property to another. Similarly, show how field locations relate to each other and the farmstead.

Some of the features cannot be represented visually and need to be noted at the bottom of the sketch. If a feature is not represented, state why.

Farmstead Unit Sketch(es) (Figure 2)

These sketches illustrate details related to the Farmstead Unit(s). They can visually depict many required features listed throughout the Regulation and Protocols. The sketch can also illustrate several features required in the Farm Unit Sketch but are difficult to illustrate due to the small Farm Unit scale. Part 5 of the Nutrient Management Protocol lists required details.

Field Sketch(es) (Figure 3)

Each field in the farm unit requires a field sketch. The field sketch must indicate the location of vegetated buffer areas next to surface water and flow path for nutrients on sloping land next to surface water. In addition, it is a good practice to include all information pertaining to that field, such as tillable area, area available for nutrient application, soil type, fertility level, crop rotation, crop yields, nutrient application rate, etc. From a good field sketch, a NMS/P reviewer should have all the information needed to determine if the plan is appropriate for the situation.

FIELD PROPERTIES

The Nutrient Management Protocol, Part 7 – Nutrient Management Plans, describes the field properties that must be provided in the NMP for each field identified in the farm unit. These Field Properties can be included as shown in the Field Sketch (*Figure 3*).

MANURE STORAGES AND POLLUTED RUNOFF MANAGEMENT

The NMA requires that manure and runoff from storages and outside yards be managed in a manner that controls pollution. It is your decision whether to take action before it is required for your operation. However, it is recommended, especially if environmental problems are a possibility.

There may be other reasons for postponing taking any action prior to it being a requirement, such as:

- the costs can be considerable
- grants that may be available in the future will probably not be retroactive
- all decisions regarding what will be required apply to phased-in operations
- new technology may be developed that might be more suitable for your operation.

Plan carefully before proceeding with extensive storage structures or other related expenditures. If the decision is made to proceed, be sure and obtain advice from OMAFRA.

SAMPLING AND ANALYSIS OF SOILS AND NUTRIENTS

All fields to which nutrients will be applied require a soil test. The first NMP can use default values of 101 mg/L of P and 251 mg/L of K. The Regulation then requires a soil test at least once every 5 years. Every NMP, after the first plan, must be based upon a current soil test. NMPs where non-agricultural source materials are applied must have a current soil test that includes analysis of heavy metals.

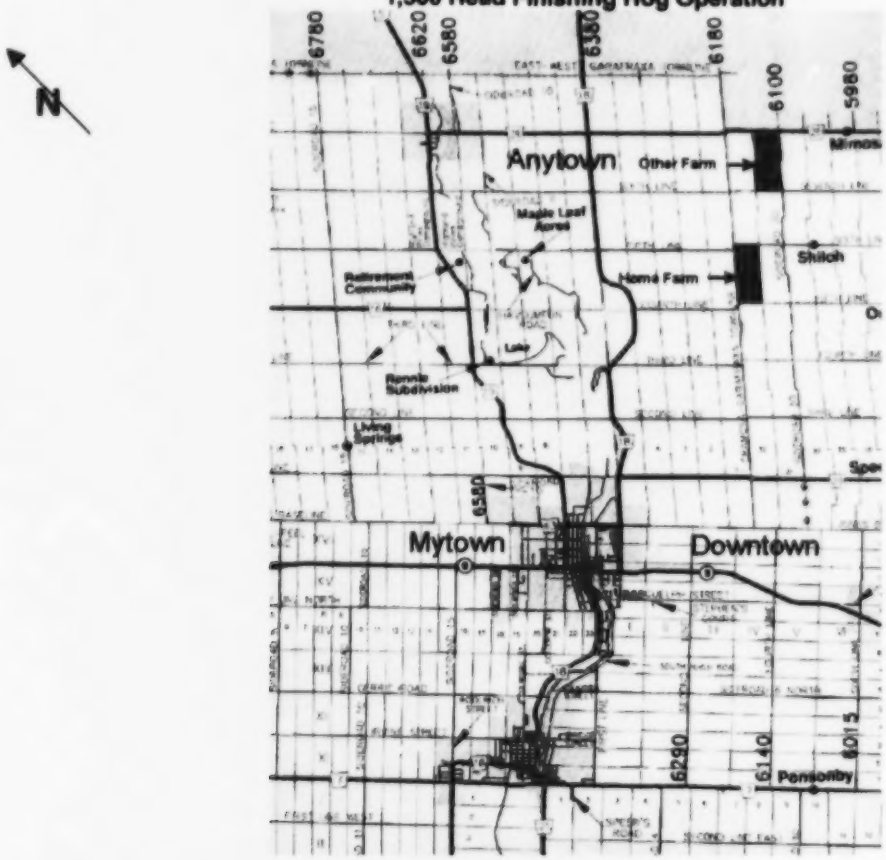
In order to ensure that reliable information is available for your farm, keep soil test records and track any changes to crop production or nutrient application. To help identify the fields in the NMAN software, name the fields and correlate the soil tests with the fields in question. The accuracy of the soil test information is only as good as the sampling technique. Follow recommended soil sampling procedures precisely.

The protocol also covers how nutrients such as manure and sludge are to be sampled and how the samples are to be analyzed by an accredited laboratory.

A directory of soil test labs can be obtained from www.omafra.gov.on.ca. A listing of ISO/IEC 17025 accredited labs that analyse other materials may be obtained from www.scc.ca. Select Programs and Services, on the next screen select Laboratories and on the next screen select Search the Directory PALCAN SCOPES, which is the database.

Figure 1. Smithbrook Farm Unit Sketch

Lot 32, Fifth Line, Centre Wellington Twp.
1,300 Head Finishing Hog Operation



A complete farm unit sketch will show all of the following, if applicable:

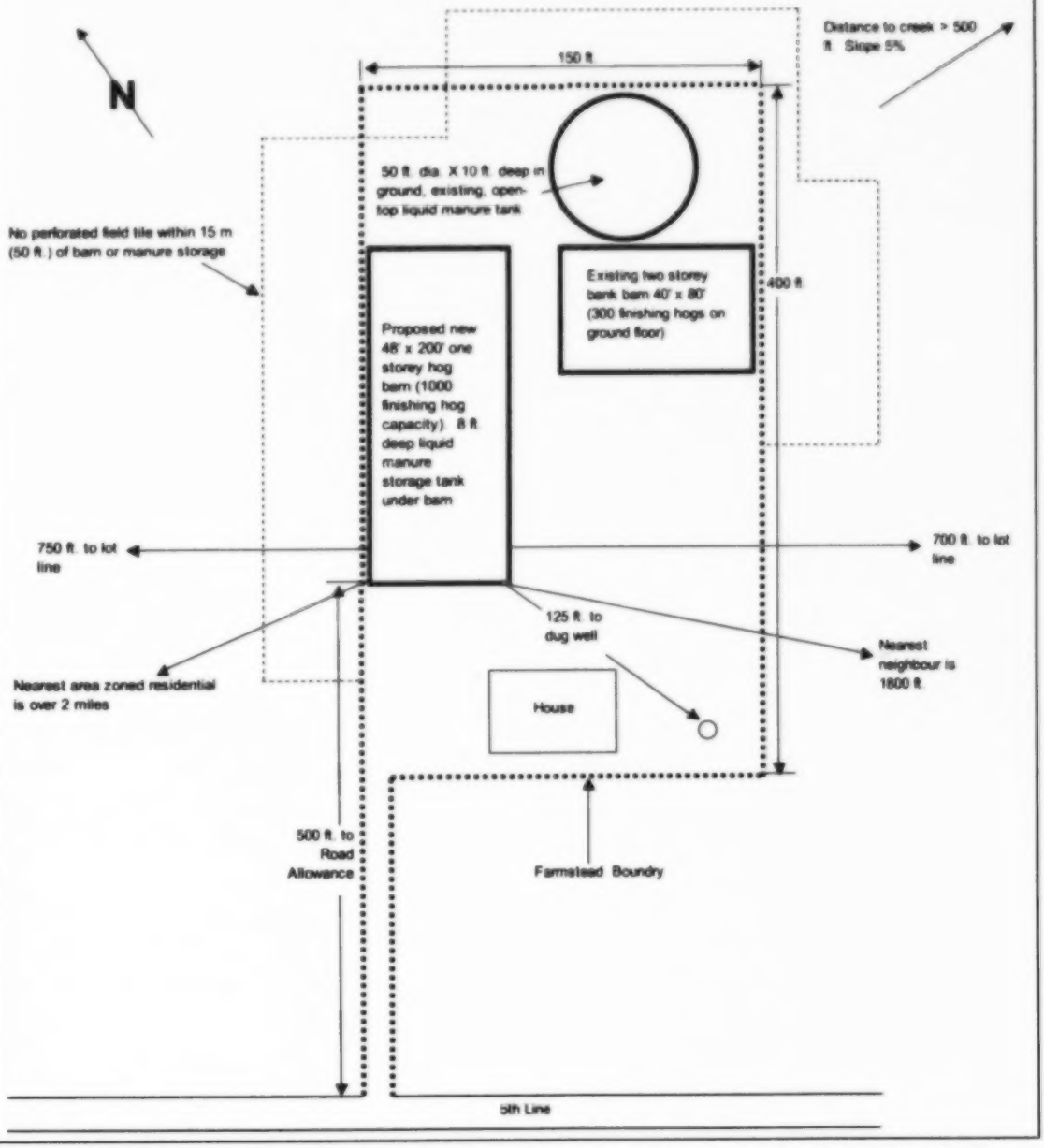
- Location of the entire land base declared in the farm unit
- Land that is owned, rented or leased
- Road names, municipal boundaries
  - Location of permanent, temporary and proposed generating facilities
  - Location of permanent, temporary and proposed storage facilities and sites
  - Dimensions of all generating and storage facilities and sites

- Distance to sensitive features within the farm unit and outside the farm unit but within regulated distances:
  - Municipal wells
  - Known wells (includes gas, oil, test and water wells)
  - Tile inlets
  - Surface water (as defined in Part 1 of the Regulation)

Note: Features indicated by "-" above may be more easily shown on the Farmstead or Field Sketch due to small scale of Farm Unit Sketch.

Figure 2

Smithbrook Farmstead Sketch


N
Distance to creek > 500 ft. Slope 5%
150 ft.
50 ft. dia. X 10 ft. deep in ground, existing, open-top liquid manure tank
No perforated field tile within 15 m (50 ft.) of barn or manure storage
Existing two storey bank barn 40' x 80' (300 finishing hogs on ground floor)
400 ft.
Proposed new 48' x 200' one storey hog barn (1000 finishing hog capacity). 8 ft. deep liquid manure storage tank under barn
750 ft. to lot line
700 ft. to lot line
125 ft. to dug well
Nearest neighbour is 1800 ft.
Nearest area zoned residential is over 2 miles
House
500 ft. to Road Allowance
Farmstead Boundry
5th Line

A complete Farmstead Sketch will show all information in sketch above and in list below, if applicable:

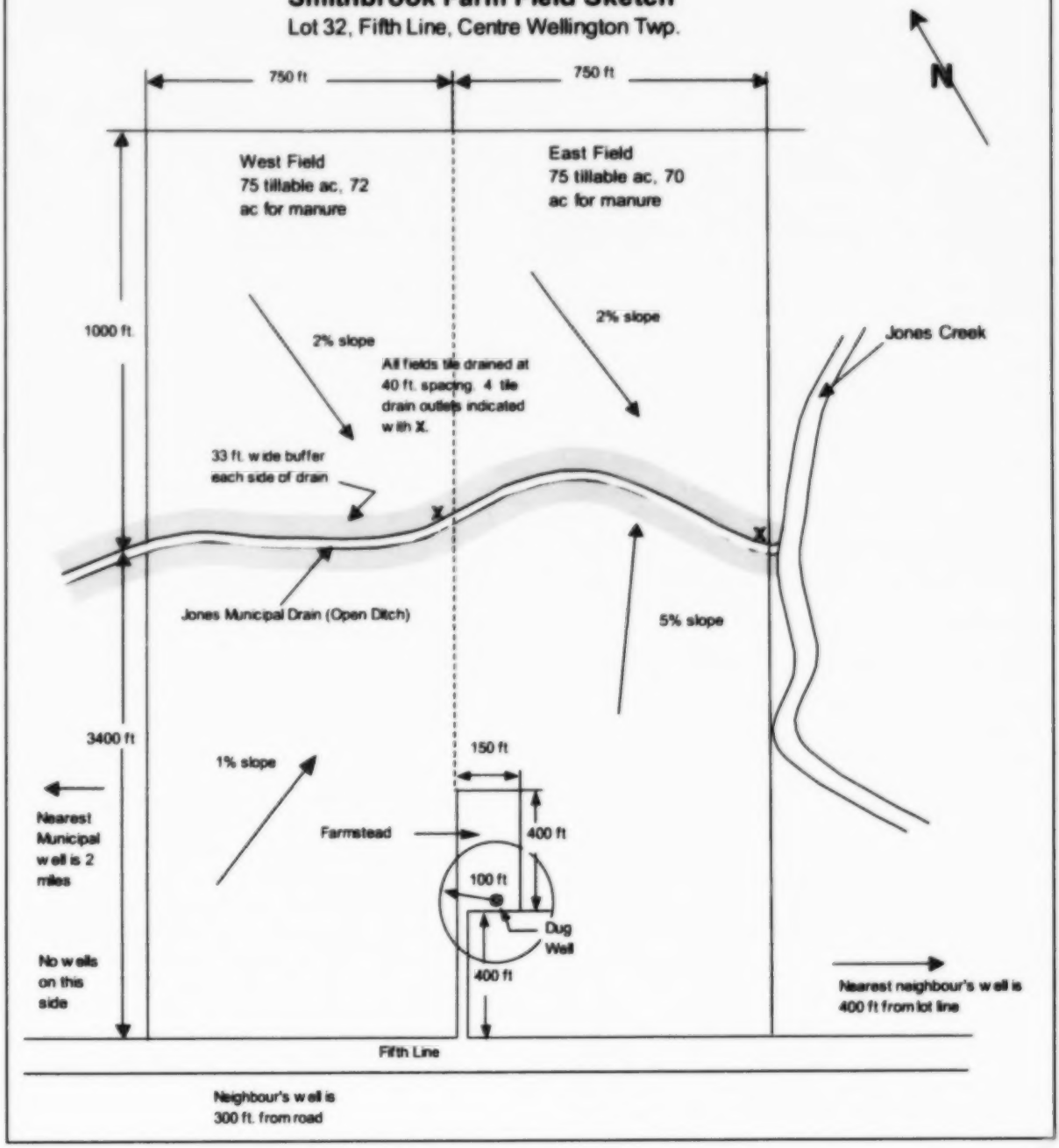
1. Location, number of stories and outside dimensions of barns and manure storages, both existing and new.
2. Minimum Distance Separation II (MDS II) between new or renovated livestock buildings and manure storages and other neighbouring land uses (neighbours dwellings, residential areas, lot lines, road allowances, etc.)
3. Location, type and distances to known wells
4. Number and type of livestock in each barn
5. Location and distance to field drainage tile and surface inlets
6. Flow path distance if within 500 ft. of surface water
7. A north arrow
8. Outdoor confinement areas, size and type of surface (earth or concrete)

Not to Scale

Figure 3

Smithbrook Farm Field Sketch

Lot 32, Fifth Line, Centre Wellington Twp.



A complete field sketch will show all applicable information in sketch above and in table below.

	Field Name	Field Name
	West Field	East Field
1. % slope beside the surface water, if the field is within 150 m (500 ft) of surface water.	2	5
2. Is field tile drained? Yes or No?	Yes	Yes
3. Maximum sustained field slope?	2	5
4. Predominant soil series and soil texture for the field?	Perth clay loam	Perth clay loam
5. Is surface water adjacent, contained or not present within the field?	Contained	Contained/Adjacent

Not to scale

MANURE TESTING

Manure must be tested at least once every 5 years or you may use the default data from the Nutrient Management Protocol. Prescribed sampling procedures are found in Sampling and Analysis Protocol, Section 1.0 Sampling. Farmers preparing their initial plans are encouraged to use the average values found in the NMAN databank. For subsequent plans however, actual sample values may be used. Each type of prescribed material must be tested separately.

If sample analyses vary more than 30% from the average values listed in the table *Available Nutrients for Manure from Various Livestock Types* found in NM Protocol Part 5 Appendix 1 for that type of material, it is required for the variation to be substantiated. For example, the manure may be more diluted because of the addition of excess wastewater. Feed additives that change the characteristics of the manure may also affect the nutrient test values obtained. If using feed additives you must keep an accurate record of their use in order to prove that your testing values are accurate.

CROPPING PRACTICES

Another critical component of an NMP is cropping practice. This includes information on tillage type, planting dates, crop rotation, harvest dates and yields. You need to record this information throughout the duration of the NMP. As well, you need to know the history of the rotations and yields in each field prior to the time you complete your first NMP. Again, it is important to name the fields so a consistent record is maintained between soil test values, cropping information and nutrient application information.

One good place to obtain crop yield information is from your crop insurance reports. The average values for your township are included in the NMAN database.

All nutrients applied to the land must also be recorded, both before and during the term of an NMP. The records must indicate the type of nutrient, the amount applied, its composition, and when and how it was applied.

EXPANSION OF THE FARMING OPERATION

If you are planning to expand your livestock operation and a building permit is required, remember the Regulation adds new requirements to consider. If your farm unit will generate more than 5 NU after the expansion, you must prepare a provincially approved NMS. While the Regulation supersedes municipal bylaws that deal with similar subject matter, you must meet all other municipal bylaws that pertain to your planned expansion such as building permits, Minimum Distance Separation II (MDS II) distances, etc.

The Nutrient Management Act Regulation contains other provisions relating to existing buildings and/or manure storages. The Regulation generally requires a minimum of 240 days of permanent storage for all manure and/or prescribed materials. However there are several exceptions to this rule:

- there are appropriate manure broker agreements
- there are appropriate manure transfer agreements
- where the number of animals housed in an existing barn is less than barn capacity
- temporary field storage, under certain conditions, is acceptable
- the manure generation period requires less than 240 days storage
- the NMP provides for the timely application of nutrients to land that eliminates the need for storing nutrients for 240 days.

For new and/or expanding operations, 240 days of manure storage for barn capacity are required. In addition, the 240 days for solid manure can include temporary field storages, under certain conditions.

There must be control of runoff from manure storages and yards.

Under the Regulation, there are siting and construction standards for various types of manure storages and, in particular, earthen manure storages, (which are not covered by the Building Code Act, 1992). There are requirements for site testing and characterization to be performed by professionals. The manure storage design, construction supervision and inspection and sign-off that the completed structure meets the Regulation must be performed by a professional engineer with the exception of a permanent solid nutrient storage facility having a floor area of 600 m^2 (6,456 ft^2) or less with nutrient supporting retaining walls not exceeding 1 m (3 ft) in height above the floor. A person who is not a professional engineer may carry out construction of this type of storage facility. The expansion or renovation of an existing storage is subject to the same provisions

CONTINGENCY PLANS

You may already have a spills contingency plan from the Environmental Farm Plan program. This is a good start but Part 11 of the Nutrient Management Protocol requires a contingency plan that details how to:

- manage a spill
- handle more nutrient than planned for

- address insufficient storage capacity
- handle adverse weather and field conditions or equipment problems.

Once a NMS/P has been approved or registered any significant variation from the plan could be considered a contingency. Prior to needing a NMS/P it is a good practice to make note of possible situations that arise or could arise where a contingency could occur. For instance, is there a field in a low land area that floods? If so, one would need to plan for an alternative spreading site.

CERTIFICATION AND LICENSING

The Regulation outlines certificates and licenses required for all parties involved in nutrient management. As a farmer, 1 certificate is required.

- If required to have a NMP/S, farmers need an agricultural operation planning certificate to prepare their own nutrient management strategy or plan. This certificate was required as of Sept. 29, 2005.

There are numerous other certificates and licenses required for businesses involved in other aspects of nutrient management such as manure brokers or manure spreading.

LAND LEASES, APPLICATION AGREEMENTS AND NUTRIENT TRANSFER AGREEMENTS

In order to prepare for the Nutrient Management Act and Regulation, one must determine whether there is sufficient land to apply all of the nutrients generated. This land may be owned, leased or belong to another farmer who is willing to accept the nutrients under an application agreement or Nutrient Transfer Agreement. If, on the other hand, you are transferring your manure to another farmer who will be utilizing it under his own NMP, or if it is going to an intermediate operation (such as a mushroom facility), any land where that material is applied is not a part of your farm unit. Another option is an agreement with a Broker to remove the manure from your operation.

In planning ahead for the time when the Regulation applies to you, it is good practice to formalize, in writing, those land rental agreements and other informal arrangements you may currently have with neighbouring land owners.

For more detailed information on agreements, see the OMAFRA Factsheet *Manure Agreements with Brokers And Neighbours*, Order No. 04-061.

For further information on related subjects refer to the OMAFRA website at www.omafra.gov.on.ca.

This Factsheet was written by **Harold Cuthbertson**, BMP Technical Integration & Transfer Engineer, **Andrew Jamieson,** Nutrient Management Approvals Engineer, OMAFRA and **Peter Doris,** Nutrient Management Specialist.

FOR YOUR NOTES

FOR YOUR NOTES

Do you know about Ontario's new Nutrient Management Act?

The provincial Nutrient Management Act (NMA) and the Regulation 267/03, as amended, regulates the storage, handling and application of nutrients that could be applied to agricultural crop land. The objective is to protect Ontario's surface and groundwater resources.

Please consult the regulation and protocols for the specific legal details. This Factsheet is not meant to provide legal advice. Consult your lawyer if you have questions about your legal obligations.

For more information on the NMA call the Nutrient Management Information Line at 1-866-242-4460, e-mail nman@omafra.gov.on.ca or visit www.omafra.gov.on.ca.

Factsheets are continually being updated so please ensure that you have the most recent version.

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